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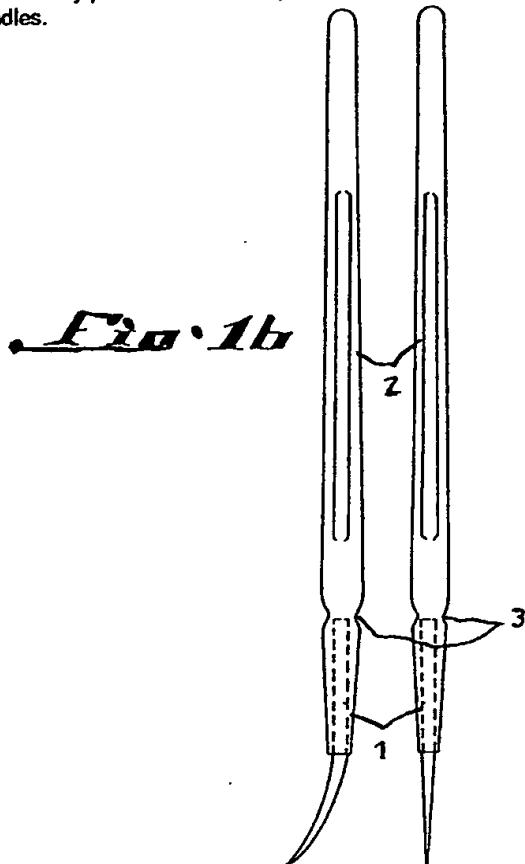
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## (54) Disposable explorer with frangible handle

(57) A disposable explorer is provided with a plastics handle 2 coupled to a stainless steel needle 1. The handle is provided with a neck portion 3 having a frangible reduced cross sectional area. The novel design reduces manufacturing cost and minimizes secondary pollution in that the plastics handle may be collected for use as required in the molding of new explorer handles.



*Fig. 1b*

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1982.

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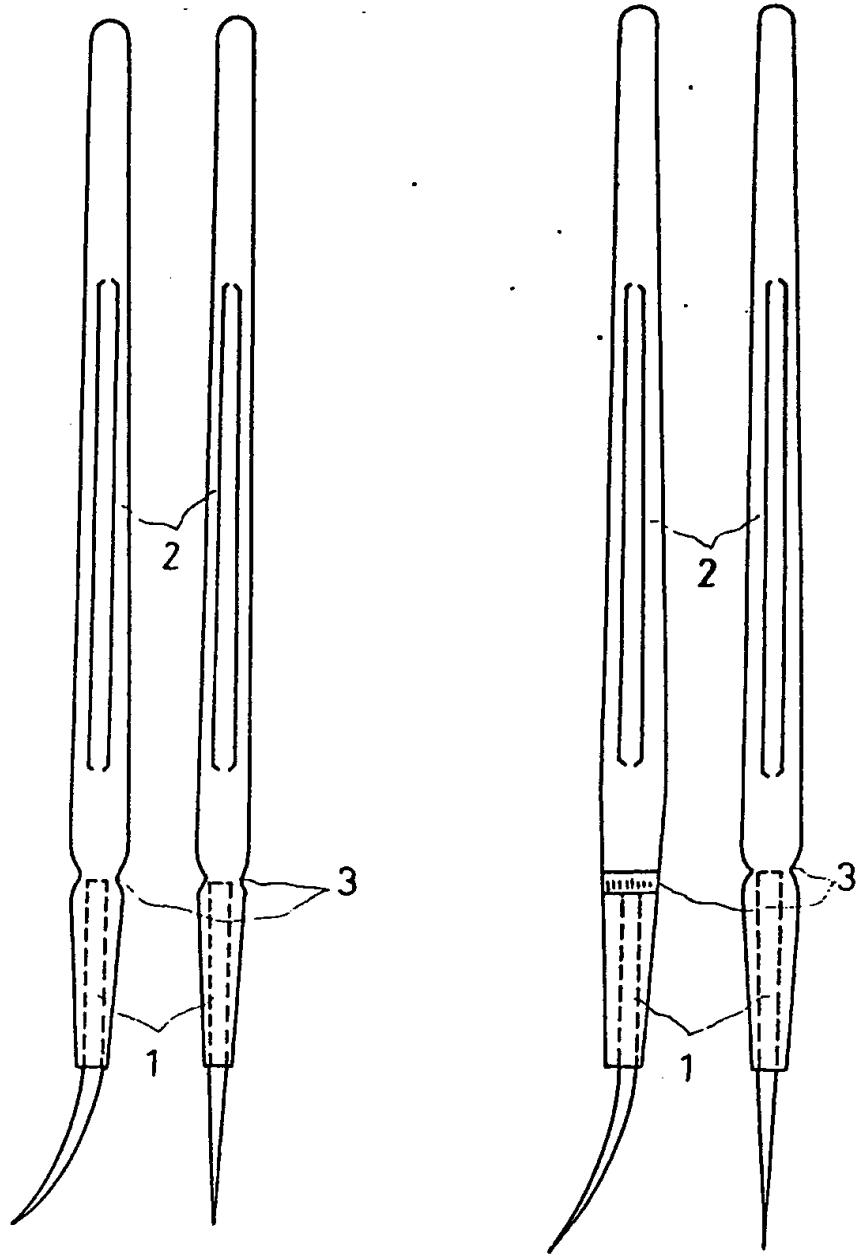


Fig. 1b

Fig. 1a

DISPOSABLE EXPLORER WITH FRANGIBLE HANDLE

BACKGROUND OF THE INVENTION

The medical apparatus that are commonly used for oral cavity treatment, are typically made of stainless steel in one integrated unit. However, in recent times, such viruses as AIDS, which are not easily killed by regular sterilizing methods, have brought great concern to the medical profession and the general public. Therefore, there has been a great demand for medical apparatus with disposable patient contact portions. During the installation or disassembly procedure, the original handle portion of such an apparatus may still be contaminated. Thus there is a strong demand from otolaryngological surgeons for a disposable plastic explorer to replace the conventional stainless steel product. Further, the plastic explorer can be collected for use as required in the molding of new handles and thereby reduce secondary pollution. Therefore, a disposable explorer which has a frangible neck portion for separating the handle from the needle to prevent reuse is of great value.

SUMMARY OF THE INVENTION

A disposable explorer is provided. The disposable explorer includes a stainless steel needle. The explorer also includes a handle formed from a longitudinally extended plastic rod. The plastic rod is fixedly coupled on one end to the stainless steel needle. The rod is provided with a portion having a reduced cross sectional area for forming a frangible region for the separation of the needle from the handle for disposal of both.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1a is a top and side plane view of the disposable explorer; and,

FIG. 1b is a top and side plane view of an alternate embodiment of the disposable explorer.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The explorer, according to the inventive concept, as shown in FIGS. 1a and 1b, is prevented from reuse by means of a frangible neck 3 formed in the handle 2. The body of the explorer comprises a stainless steel needle 1 and a plastic rod 2. The connection of the plastic rod 2 with the stainless steel needle 1 is arranged to provide a neck 3 of reduced cross sectional area having a pair of flattened opposing surfaces, as shown in FIG. 1a, or a bottle-gourd shape, as shown in FIG. 1b, formed by opposing oppositely directed conical portions. The neck 3 having a reduced cross sectional area is thereby weakened so as to provide a frangible area which is easy to break. Thus the plastic rod 2 forming a handle and the stainless steel needle 1 can be separated after use for ease of disposal and prevention of reuse.

In general, the invention relates to a novel explorer made disposable by a plastic handle 2 having a neck 3 of reduced cross sectional area to provide a frangible portion to allow separation of the needle 1 from the handle 2. The reduced cross sectional area neck 3 can be formed during the molding of handle 2, or in subsequent operation by heat pressing, localized extruding or machining. Although not important to the inventive concept, the needle 1 may be joined to the handle 2 by techniques well known in the art, such as molding the handle to the needle, adhesive bonding, swaging, or the like. The needle having a portion disposed within a portion of the plastic rod 2 which forms the handle of the explorer. The plastic rod 2 may be formed from a plastic material comprising compositions such as polyvinylchloride, polystyrene, or any number of acrylic compositions, or the like.

WHAT IS CLAIMED IS:

1. A disposable explorer, comprising:

    a stainless steel needle;

    a handle member formed from a longitudinally extended rod fixedly coupled to said needle on one end thereof, said rod being formed from a plastic material composition and having a portion with a reduced cross sectional area for forming a frangible region for the separation of said needle from said handle for the disposal thereof.

2. The disposable explorer as recited in Claim 1 wherein said reduced cross sectional area is formed by a pair of opposing flattened surfaces.

3.. The disposable explorer as recited in  
Claim 1 wherein said reduced cross sectional area  
is formed by a pair of opposing oppositely directed  
conical portions of said rod.